

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS

This listing of claims will replace all prior versions, all listings, of claims in the application:

1. - 3. (Canceled)

4. (currently amended) A reproduction apparatus for reproducing information from an information storage medium, wherein the information storage medium comprises:

a recording information area; and

an aggregate attribute information area,

wherein the recording information area comprises:

a partial recording information area where one or more partial recording information objects are recorded, each of the partial recording information objects including one or more unit audio information objects which are logically defined; and

a control data area where control data including partial recording information attribute information is recorded, the control data corresponding to each of the partial recording information objects and controlling the one or more unit audio information objects included in the corresponding partial recording information objects in a predetermined order, the partial recording information attribute information indicating attributes of the one or more unit audio information objects the corresponding partial recording information objects,

and wherein

one or more unit audio information attribute information pieces are collectively recorded in the aggregate attribute information area, the one or more unit audio information attribute information pieces corresponding to each of the unit audio information objects and indicating attributes of the corresponding unit audio information objects respectively, and wherein the aggregate attribute information area is formed at a position on the information storage medium

such that the one or more unit audio information attribute information pieces can be detected prior to the one or more partial recording information objects and the control data, and the reproduction apparatus comprises:

- a reading unit which reads information from the information storage medium;
 - a storage unit which stores the aggregate attribute information read by the reading unit;
 - an input unit which receives, from a user, a reproduction instruction designating the unit audio information objects to be reproduced successively; and
 - a reproduction unit which sets the attribute for the reproduction based on the aggregate attribute information stored in the storage unit and reproduces the unit audio information objects designated by the user in accordance with the attribute set,
- wherein said reproduction unit comprises:
- an obtaining unit which obtains the attributes corresponding to the unit audio information objects designated by the user from the aggregate attribute information stored in the storage unit;
 - a determining unit which determines whether or not the obtained attributes of the unit audio information objects to be successively reproduced are identical; and
 - an attribute change unit which starts an attribute setting of the unit audio information object to be reproduced next immediately after the reproduction of the unit audio information object currently reproduced, if the determining unit determines that the attributes are different.

5. (previously presented) The reproduction apparatus according to claim 4, wherein the reproduction unit further comprises a search unit which transfers the reading unit to a recording position on the information storage medium of the unit audio information object to be reproduced next immediately after the reproduction of the unit audio information object currently reproduced, and allows the reproduction unit to start reproduction of the unit audio information object to be reproduced next after a predetermined waiting time has passed from the start of the transfer of the reading unit.

6. (previously presented) The reproduction apparatus according to claim 5, wherein the waiting time is longer than a time required to change the set attribute by the attribute change unit.

7. (currently amended) A reproduction apparatus for reproducing information from an information storage medium, wherein the information storage medium comprises:

a recording information area; and

an aggregate attribute information area,

wherein the recording information area comprises:

a partial recording information area where one or more partial recording information objects are recorded, each of the partial recording information objects including one or more unit audio information objects which are logically defined; and

a control data area where control data including partial recording information attribute information is recorded, the control data corresponding to each of the partial recording information objects and controlling the one or more unit audio information objects included in the corresponding partial recording information objects in a predetermined order, the partial recording information attribute information indicating attributes of the one or more unit audio information objects the corresponding partial recording information objects,

and wherein

one or more unit audio information attribute information pieces are collectively recorded in the aggregate attribute information area, the one or more unit audio information attribute information pieces corresponding to each of the unit audio information objects and indicating attributes of the corresponding unit audio information objects respectively, and wherein the aggregate attribute information area is formed at a position on the information storage medium such that the one or more unit audio information attribute information pieces can be detected prior to the one or more partial recording information objects and the control data, and the reproduction apparatus comprises:

a reading unit which reads information from the information storage medium;

a table producing unit which obtains the aggregate attribute information corresponding to the unit audio information objects recorded on the information storage medium from the reading unit and produces an aggregate attribute information table;

a storage unit which stores the aggregate attribute information table produced by the table producing unit;

an input unit which receives, from a user, a reproduction instruction designating the unit audio information objects to be reproduced successively; and

a reproduction unit which sets the attribute for the reproduction based on the aggregate attribute information table stored in the storage unit and reproduces the unit audio information objects designated by the user in accordance with the attribute set,
wherein said reproduction unit comprises:

an obtaining unit which obtains the attributes corresponding to each of the unit audio information objects designated by the user from the aggregate attribute information table stored in the storage unit;

a determining unit which determines whether or not the obtained attributes of the unit audio information objects to be successively reproduced are identical; and

an attribute change unit which starts an attribute setting of the unit audio information object to be reproduced next immediately after the reproduction of the unit audio information object currently reproduced, if the determining unit determines that the attributes are different.

8. (previously presented) The reproduction apparatus according to claim 7, wherein the reproduction unit further comprises a search unit which transfers the reading unit to a recording position on the information storage medium of the unit audio information object to be reproduced next immediately after the reproduction of the unit audio information object currently reproduced, and allows the reproduction unit to start reproduction of the unit audio information object to be reproduced next after a predetermined waiting time has passed from the start of the transfer of the reading unit.

9. (previously presented) The reproduction apparatus according to claim 8, wherein the waiting time is longer than a time required to change the set attribute by the attribute change unit.

10. (currently amended) A reproduction method for reproducing information from an information storage medium, where the information storage medium comprises:

a recording information area; and

an aggregate attribute information area,

wherein the recording information area comprises:

a partial recording information area where one or more partial recording information objects are recorded, each of the partial recording information objects including one or more unit audio information objects which are logically defined; and

a control data area where control data including partial recording information attribute information is recorded, the control data corresponding to each of the partial recording information objects and controlling the one or more unit audio information objects included in the corresponding partial recording information objects in a predetermined order, the partial recording information attribute information indicating attributes of the one or more unit audio information objects the corresponding partial recording information objects,
and wherein

one or more unit audio information attribute information pieces are collectively recorded in the aggregate attribute information area, the one or more unit audio information attribute information pieces corresponding to each of the unit audio information objects and indicating attributes of the corresponding unit audio information objects respectively, and wherein the aggregate attribute information area is formed at a position on the information storage medium such that the one or more unit audio information attribute information pieces can be detected prior to the one or more partial recording information objects and the control data,
and the reproduction method comprises:

reading information from the information storage medium;

storing the aggregate attribute information read in the reading process in a storage unit;

receiving, from a user, a reproduction instruction designating the unit audio information objects to be reproduced successively;

setting the attribute for the reproduction based on the aggregate attribute information stored in the storage unit; and

reproducing the unit audio information objects designated by the user in accordance with the attribute set,

wherein reproducing the unit audio information objects comprises:

obtaining the attributes corresponding to the unit audio information objects designated by the user from the aggregate attribute information stored in the storage unit;

determining whether or not the obtained attributes of the unit audio information objects to be successively reproduced are identical; and

starting an attribute setting of the unit audio information object to be reproduced next immediately after the reproduction of the unit audio information object currently reproduced, if it is determined that the attributes are different.

11. (previously presented) The reproduction method according to claim 10, wherein the reproduction method further comprised a search process, the search process comprising:

transferring an information reading position to a recording position on the information storage medium of the unit audio information object to be reproduced next immediately after the reproduction of the unit audio information object currently reproduced; and

starting reproduction of the unit audio information object to be reproduced next after a predetermined waiting time had passed from the start of the transfer of the information reading position.

12. (previously presented) The reproduction method according to claim 11, wherein the waiting time is longer than a time required to change the set attribute.

13. (currently amended) A reproduction method for reproducing information from an information storage medium, wherein the information storage medium comprises:

a recording information area; and

an aggregate attribute information area,

wherein the recording information area comprises:

a partial recording information area where one or more partial recording information objects are recorded, each of the partial recording information objects including one or more unit audio information objects which are logically defined; and

a control data area where control data including partial recording information attribute information is recorded, the control data corresponding to each of the partial recording information objects and controlling the one or more unit audio information objects included in the corresponding partial recording information objects in a predetermined order, the partial recording information attribute information indicating attributes of the one or more unit audio information objects the corresponding partial recording information objects,
and wherein

one or more unit audio information attribute information pieces are collectively recorded in the aggregate attribute information area, the one or more unit audio information attribute information pieces corresponding to each of the unit audio information objects and indicating attributes of the corresponding unit audio information objects respectively, and wherein the aggregate attribute information area is formed at a position on the information storage medium such that the one or more unit audio information attribute information pieces can be detected prior to the one or more partial recording information objects and the control data, and the reproduction method comprises:

reading information from the information storage medium;

obtaining the aggregate attribute information corresponding to the unit audio information objects recorded on the information storage medium in the reading process to produce an aggregate attribute information table;

storing the produced aggregate attribute information table into a storage unit;

receiving, from a user, a reproduction instruction designating the unit audio information objects to be reproduced successively;

setting the attribute for the reproduction based on the aggregate attribute information table stored in the storage unit; and

reproducing the unit audio information objects designated by the user in accordance with the attribute set,

wherein reproducing the unit audio information objects comprises:

obtaining the attributes corresponding to the unit audio information objects designated by the user from the obtained aggregate attribute information table stored in the storage unit;

determining whether or not the attributes of the unit audio information objects to be successively reproduced are identical; and

starting an attribute setting of the unit audio information object to be reproduced next immediately after the reproduction of the unit audio information object currently reproduced, if it is determined that the attributes are different.

14. (previously presented) The reproduction method according to claim 13, wherein the reproduction method further comprises a search process, wherein the search process comprises:

transferring an information reading position to a recording position on the information storage medium of the unit audio information object to be reproduced next immediately after the reproduction of the unit audio information object currently reproduced; and

starting reproduction of the unit audio information object to be reproduced next after a predetermined waiting time has passed from the start of the transfer of the information reading position.

15. (previously presented) The reproduction method according to claim 14, wherein the waiting time is longer than a time required to change the set attribute.

16. – 43. (canceled)

44. (currently amended) An information storage medium comprising:

a recording information area and

an aggregate attribute information area,

wherein the recording information area comprises:

a partial recording information area where one or more partial recording information objects are recorded, each of the partial recording information objects including one or more unit audio information objects which are logically defined; and

a control data area where control data including partial recording information attribute information is recorded, the control data corresponding to each of the partial recording information objects and controlling the one or more unit audio information objects included in the corresponding partial recording information objects in a predetermined order, the partial recording information attribute information indicating attributes of the one or more unit audio information objects the corresponding partial recording information objects,

and wherein

one or more unit audio information attribute information pieces are collectively recorded in the aggregate attribute information area, the one or more unit audio information attribute information pieces corresponding to each of the unit audio information objects and indicating attributes of the corresponding unit audio information objects respectively, and wherein the aggregate attribute information area is formed at a position on the information storage medium

such that the one or more unite audio information attribute information pieces can be detected prior to the one or more partial recording information objects and the control data.

45. (previously presented) The information storage medium according to claim 44, wherein the aggregate attribute information area is formed within a management information area where management information is recorded, the management information being information to manage information recorded on the information storage medium.

46. (previously presented) The information storage medium according to claim 44, wherein at least one unit audio information attribute information piece comprises:

information indicating a sampling frequency of at least one unit audio information object; and

a quantization bit number of the at least one unit audio information object corresponding to the at least one unit audio information attribute information piece.

47. (previously presented) The information storage medium according to claim 45, wherein at least one unit audio information attribute information piece comprises:

information indicating a sampling frequency of at least one unit audio information object; and

a quantization bit number of the at least one unit audio information object corresponding to the at least one unit audio information attribute information piece.

48. (previously presented) The information storage medium according to claim 44, wherein the partial recording information attribute information comprises:

a number of at least one unit audio information object;

playback time of the at least one unit audio information object;

a start address of the at least one unit audio information object on the information storage medium; and

an end address of the at least one unit audio information on the information storage medium; and

a corresponding unit audio information attribute information piece.

49. (previously presented) The information storage medium according to claim 45, wherein the partial recording information attribute information comprises:

a number of at least one unit audio information object;

playback time of the at least one unit audio information object;

a start address of the at least one unit audio information object on the information storage medium; and

an end address of the at least one unit audio information object on the information storage medium; and

a corresponding unit audio information attribute information piece.

50. (previously presented) The information storage medium according to claim 46, wherein the partial recording information attribute information comprises:

a number of at least one unit audio information object;

playback time of the at least one unit audio information object;

a start address of the at least one unit audio information object on the information storage medium;

an end address of the at least one unit audio information on the information storage medium; and

a corresponding unit audio information attribute information piece.

51. (previously presented) The information storage medium according to claim 47, wherein the partial recording information attribute information comprises:

a number of at least one unit audio information object;

playback time of the at least one unit audio information object;

a start address of the at least one unit audio information object on the information storage medium;

an end address of the at least one unit audio information object on the information storage medium; and

a corresponding unit audio information attribute information piece.

52. (currently amended) A reproduction apparatus for reproducing information from an information storage medium, wherein said information storage medium comprises:

a recording information area; and
an aggregate attribute information area,

wherein the recording information area comprises:

a partial recording information area where one or more partial recording information objects are recorded, each of the partial recording information objects including one or more unit audio information objects which are logically defined; and

a control data area where control data including partial recording information attribute information is recorded, the control data corresponding to each of the partial recording information objects and controlling the one or more unit audio information objects included in the corresponding partial recording information objects in a predetermined order, the partial recording information attribute information indicating attributes of the one or more unit audio information objects the corresponding partial recording information objects,
and wherein

one or more unit audio information attribute information pieces are collectively recorded in the aggregate attribute information area, the one or more unit audio information attribute information pieces corresponding to each of the unit audio information objects and indicating attributes of the corresponding unit audio information objects respectively, and wherein the aggregate attribute information area is formed at a position on the information storage medium such that the one or more unit audio information attribute information pieces can be detected prior to the one or more partial recording information objects and the control data,
and the reproduction apparatus comprising:

a detecting unit which detects the one or more unit audio information attribute information pieces from the aggregate information area; and

a reproducing unit which reproduces the one or more unit audio information objects based on the detected one or more unit audio information attribute information pieces.

53. (previously presented) The reproduction apparatus according to claim 52, wherein the aggregate attribute information area is formed within a management information area where

management information is recorded, the management information being information to manage information recorded on the information storage medium.

54. (previously presented) The reproduction apparatus according to claim 52, wherein at least one unit audio information attribute information piece comprises:

information indicating a sampling frequency of at least one unit audio information object; and

a quantization bit number of the at least one unit audio information object corresponding to the at least one unit audio information attribute information piece.

55. (previously presented) The reproduction apparatus according to claim 52, wherein at least one unit audio information attribute information piece comprises:

information indicating a sampling frequency of at least one unit audio information object; and

a quantization bit number of the at least one unit audio information object corresponding to the at least one unit audio information attribute information piece,

and wherein

the aggregate attribute information area is formed within a management information area where management information is recorded, the management information being information to manage information recorded on the information storage medium.

56. (previously presented) The reproduction apparatus according to claim 52, wherein the partial recording information attribute information comprises:

a number of at least one unit audio information object;

playback time of the at least one unit audio information object;

a start address of the at least one unit audio information object on the information storage medium;

an end address of the at least one unit audio information object on the information storage medium; and

a corresponding unit audio information attribute information piece.

57. (previously presented) The reproduction apparatus according to claim 52, wherein the partial recording information attribute information comprises:

a number of at least one unit audio information object;

playback time of the at least one unit audio information object;

a start address of the at least one unit audio information object on the information storage medium;

an end address of the at least one unit audio information object on the information storage medium; and

a corresponding unit audio information attribute information piece, and

wherein the aggregate attribute information area is formed within a management information area where management information is recorded, the management information being information to manage information recorded on the information storage medium.

58. (previously presented) The reproduction apparatus according to claim 52, wherein the partial recording information attribute information comprises:

a number of at least one unit audio information object;

playback time of the at least one unit audio information object;

a start address of the at least one unit audio information object on the information storage medium;

an end address of the at least one unit audio information object on the information storage medium; and

a corresponding unit audio information attribute information piece, and

wherein the corresponding unit audio information attribute information piece comprises:

information indicating a sampling frequency of the at least one unit audio information object; and

a quantization bit number of the at least one unit audio information object corresponding to the corresponding unit audio information attribute information piece.

59. (previously presented) The reproduction apparatus according to claim 52, wherein the partial recording information attribute information comprises:

a number of at least one unit audio information object;

playback time of the at least one unit audio information object;

a start address of the at least one unit audio information object on the information storage medium;

an end address of the at least one unit audio information object on the information storage medium; and

a corresponding unit audio information attribute information piece,

and wherein the corresponding unit audio information attribute information piece comprises:

information indicating a sampling frequency of the at least one unit audio information object; and

a quantization bit number of the at least one unit audio information object corresponding to the corresponding unit audio information attribute information piece,

and wherein the aggregate attribute information area is formed within a management information area where management information is recorded, the management information being information to manage information recorded on the information storage medium.

60. (currently amended) A reproduction method for reproducing information from an information storage medium, wherein said information storage medium comprises:

a recording information area; and

an aggregate attribute information area,

wherein the recording information area comprises:

a partial recording information area where one or more partial recording information objects are recorded, each of the partial recording information objects including one or more unit audio information objects which are logically defined; and

a control data area where control data including partial recording information attribute information is recorded, wherein the control data corresponds to each of the partial recording information objects and controlling the one or more unit audio information objects included in the corresponding partial recording information objects in a predetermined order, the partial recording information attribute information indicating attributes of the one or more unit audio information objects - the partial recording information objects,

and wherein

one or more unit audio information attribute information pieces are collectively recorded in the aggregate attribute information area, the one or more unit audio information attribute information pieces corresponding to each of the unit audio information objects and indicating attributes of the corresponding unit audio information objects respectively, and wherein the aggregate attribute information area is formed at a position on the information storage medium such that the one or more unit audio information attribute information pieces can be detected prior to the one or more partial recording information objects and the control data, and the reproduction method comprising:

detecting the one or more unit audio information attribute information pieces from the aggregate attribute information area; and

reproducing the one or more unit audio information objects based on the detected one or more unit audio information attribute information pieces.

61. (previously presented) The reproduction method according to claim 60, wherein the aggregate attribute information area is formed within a management information area where management information is recorded, the management information being information to manage information recorded on the information storage medium.

62. (previously presented) The reproduction method according to claim 60, wherein at least one unit audio information attribute information piece comprises:

information indicating a sampling frequency of at least one unit audio information object; and

a quantization bit number of the at least one unit audio information object corresponding to the at least one unit audio information attribute information piece.

63. (previously presented) The reproduction method according to claim 60, wherein at least one unit audio information attribute information piece comprises:

information indicating a sampling frequency of at least one unit audio information object; and

a quantization bit number of the at least one unit audio information object corresponding to the at least one unit audio information attribute information piece, and wherein the aggregate

attribute information area is formed within a management information area where management information is recorded, the management information being information to manage information recorded on the information storage medium.

64. (previously presented) The reproduction method according to claim 60, wherein the partial recording information attribute information comprises:

a number of at least one unit audio information object;

playback time of the at least one unit audio information object;

a start address of the at least one unit audio information object on the information storage medium;

an end address of the at least one unit audio information on the information storage medium; and

a corresponding unit audio information attribute information piece.

65. (previously presented) The reproduction method according to claim 60, wherein the partial recording information attribute information comprises:

a number of at least one unit audio information object;

playback time of the at least one unit audio information object;

a start address of the at least one unit audio information object on the information storage medium;

an end address of the at least one unit audio information object on the information storage medium; and

a corresponding unit audio information attribute information piece,

and wherein the aggregate attribute information area is formed within a management information area where management information is recorded, the management information being information to manage information recorded on the information storage medium.

66. (previously presented) The reproduction method according to claim 60, wherein the partial recording information attribute information comprises:

a number of at least one unit audio information object;

playback time of the at least one unit audio information object;

a start address of the at least one unit audio information object on the information storage medium;

an end address of the at least one unit audio information object on the information storage medium, and

a corresponding unit audio information attribute information piece,

and wherein the corresponding unit audio information attribute information piece comprises:

information indicating a sampling frequency of the at least one unit audio information object; and

a quantization bit number of the at least one unit audio information object corresponding to the corresponding unit audio information attribute information piece.

67. (previously presented) The reproduction method according to claim 60, wherein the partial recording information attribute information comprises:

a number of at least one unit audio information object;

playback time of the at least one unit audio information object;

a start address of the at least one unit audio information object on the information storage medium;

an end address of the at least one unit audio information object on the information storage medium; and

a corresponding unit audio information attribute information piece,

and wherein the corresponding unit audio information attribute information piece comprises:

information indicating a sampling frequency of the at least one unit audio information object; and

a quantization bit number of the at least one unit audio information object corresponding to the corresponding unit audio information attribute information piece,

and wherein the aggregate attribute information area is formed within a management information area where management information is recorded, the management information being information to manage information recorded on the information storage medium.

68. (currently amended) An information recording apparatus comprising:

a first generating device which generates recording information comprising one or more partial recording information objects, each of the partial recording information objects including one or more unit audio information objects which are logically defined;

a second generating device which generates additional information comprising control data and unit audio information attribute information pieces, the control data corresponding to each of the partial recording information objects and controlling the one or more unit audio information objects included in the corresponding partial recording information objects in a predetermined order, and including partial recording information attribute information indicating attributes of the corresponding partial recording information objects the one or more unit audio information objects, and the unit audio information attribute information pieces indicating attributes of the one or more unit audio information objects respectively; and

a recording device which records the recording information and the additional information into an information storage medium,

wherein the unit audio information attribute information pieces are recorded at a position on the information storage medium such that the unit audio information attribute information pieces can be detected prior to the one or more partial recording information objects and the control data.

69. (currently amended) An information recording method comprising:

a first generating process for generating recording information comprising one or more partial recording information objects including one or more unit audio information objects which are logically defined;

a second generating process for generating additional information comprising control data and unit audio information attribute information pieces, the control data corresponding to each of the partial recording information objects and controlling the one or more unit audio information objects included in the corresponding partial recording information objects in a predetermined order, and including partial recording information attribute information indicating attributes of the one or more partial recording information objects the one or more unit audio information objects, and the audio information attribute information pieces indicating attributes of the one or more unit audio information objects respectively; and

a recording process for recording the recording information and the additional information into an information storage medium,

wherein the unit audio information attribute information pieces are recorded at a position on the information storage medium such that the unit audio information attribute information pieces can be detected prior to the one or more partial recording information objects and the control data.

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